

CLAIMS

What is claimed is:

1. A network device, comprising:
 - a core processor and core memory; and
 - 5 a link integrity module in communication with said core processor, said link integrity module being powered separately from said core processor and said core memory;
 - said network device including a D3 type cold power mode wherein said link integrity module maintains power.
- 10 2. The network device according to claim 1, wherein:
 - in said D3 type cold power mode, said network device removes power from said core memory.
- 15 3. The network device according to claim 1, wherein:
 - in said D3 type cold power mode, said network device removes power from said core processor.
- 20 4. The network device according to claim 1, further comprising:
 - a network interface.
- 25 5. The network device according to claim 1, wherein:
 - said network device is a HomePNA device.
6. The network device according to claim 1, wherein:
 - said network device is a BLUETOOTH device.

7. The network device according to claim 1, wherein:
said network device is a Homeplug device.

5 8. The network device according to claim 1, wherein:
 said network device is a wired device.

10 9. The network device according to claim 8, wherein said
 wired device is one of:
 a HomePNA device; and
 a G.989.1 compliant device.

15 10. The network device according to claim 1, wherein:
 said network device is a power line device.

20 11. The network device according to claim 10, wherein:
 said power line device is a Home Plug device.

25 12. The network device according to claim 1, wherein:
 said network device is a wireless device.

 13. The network device according to claim 12, wherein said
 wireless device is one of:
 a HomeRF device; and
 a IEEE 802.11 compliant device.

 14. The network device according to claim 1, wherein:
 said wireless device is an optical communications network
 device.

15. The network device according to claim 14, wherein:
said optical communications network device is an Infrared
device.

5 16. A method of maintaining data-based link integrity in a
powered down network device, comprising:

 providing a link integrity module powered separately from
core functionality in said network device; and

10 removing power from said core functionality of said network
device while maintaining power to said separately powered link integrity
module.

15 17. The method of providing data-based link integrity in a
powered down mode according to claim 16, wherein:

 said network device is a HomePNA device.

20 18. The method of providing data-based link integrity in a
powered down mode according to claim 16, wherein:

 said network device is a BLUETOOTH device.

25 19. The method of providing data-based link integrity in a
powered down mode according to claim 16, wherein:

 said network device is a Homeplug device.

20. Apparatus for maintaining data-based link integrity in a powered down network device, comprising:

means for providing a link integrity module powered separately from core functionality in said network device; and

5 means for removing power from said core functionality of said network device while maintaining power to said separately powered link integrity module.

21. The apparatus for providing data-based link integrity in
10 a powered down mode according to claim 20, wherein:

said network device is a HomePNA device.

22. The apparatus for providing data-based link integrity in a powered down mode according to claim 20, wherein:

15 said network device is a BLUETOOTH device.

23. The apparatus for providing data-based link integrity in a powered down mode according to claim 20, wherein:

20 said network device is a Homeplug device.

24. A method of providing both physical and data-based link integrity capability in a network, comprising:

determining if another network device in said network requires physical link integrity signaling;

25 if another network device in said network requires physical link integrity signaling, outputting a data-based link integrity packet in a physical link integrity mode; and

if no other network device in said network requires physical link integrity signaling, outputting a data-based link integrity packet in a
30 non-physical link integrity mode.

25. The method of providing both physical and data-based link integrity capability in a network according to claim 24, wherein:
said network is a HomePNA network.

5 26. The method of providing both physical and data-based link integrity capability in a network according to claim 24, wherein:
said another network device requiring physical integrity signaling is a HomePNA version 1.0 device.

10 27. Apparatus for providing both physical and data-based link integrity capability in a network, comprising:

means for determining if another network device in said network requires physical link integrity signaling;

15 means for outputting a data-based link integrity packet in a physical link integrity mode if another network device in said network requires physical link integrity signaling; and

means for outputting a data-based link integrity packet in a non-physical link integrity mode if no other network device in said network requires physical link integrity signaling.

20 28. The apparatus for providing both physical and data-based link integrity capability in a network according to claim 27, wherein:
said network is a HomePNA network.

25 29. The apparatus for providing both physical and data-based link integrity capability in a network according to claim 27, wherein:
said another network device requiring physical integrity signaling is a HomePNA version 1.0 device.